SEQUENCE LISTINGS

<110> Hanmi Pharm. Co., Ltd.

<120> EXPRESSION VECTOR FOR SECRETING ANTIBODY FRAGMENT USING E. COLI SIGNAL SEQUENCE AND METHOD FOR MASS-PRODUCING ANTIBODY FRAGMENT

<130> Q94300

<140> 10/576,068
<141> 2006-04-14

<150> KR1020030072216
<151> 2003-10-16

<150> PCT/KR04/02625
<151> 2004-10-14

<160> 36

<170> KopatentIn 1.71

<210> 1
<211> 75
<212> DNA
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<220>
<223> gene fragment of light chain variable region

<400> 1
gggaagcttc gatcggacat ccagatgacc cagtctccat cctccctgtc tgcatctgta 60

ggggacagag tcacc 75

<210> 2
<211> 80
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<213> Artificial Sequence

<220>
<223> gene fragment of light chain variable region

<400> 2
tggtttttgc tgataccagg ctaagtaatt tctgatgccc tgacttgccc gacaagtgat 60

ggtgactctg tcccctacag 80

<210> 3
<211> 80
<212> DNA
<213> Artificial Sequence

<220>
<223> gene fragment of light chain variable region

<400> 3
cctggtatca gcaaaaacca gggaaagccc ctaagctcct gatctatgct gcatccactt 60

tgcaatcagg ggtcccatct 80

<210> 4
<211> 80
<212> DNA
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<220>
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<400> 4
aggctgtagg ctgctgatgg tgagagtgaa atctgtccca gatccactgc cactgaaccg 60

agatgggacc cctgattgca 80

<210> 5
<211> 80
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<220>
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<400> 5
ccatcagcag cctacagcct gaagatgttg caacttatta ctgtcaaagg tataaccgtg 60

caccgtatac ttttggccag 80

<210> 6
<211> 41
<212> DNA
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<400> 6
tttgatttcc accttggtcc cctggccaaa agtatacggt g 41

<210> 7
<211> 75
<212> DNA
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<220>
<223> gene fragment of heavy chain variable region

<400> 7

gggaagcttc gatcggaggt gcagctggtg gagtctgggg gaggcttggt acagcccggc 60

aggtccctga gactc 75

<210> 8
<211> 79
<212> DNA
<213> Artificial Sequence

<220>
<223> gene fragment of heavy chain variable region

<400> 8
agcttgccgg acccagtgca tggcataatc atcaaaggtg aatccagagg ccgcacagga 60

gagtctcagg gacctgccg 79

<210> 9
<211> 80
<212> DNA
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<220>
<223> gene fragment of heavy chain variable region

<400> 9
tgcactgggt ccggcaagct ccagggaagg gcctggaatg ggtctcagct atcacttgga 60

atagtggtca catagactat 80

<210> 10
<211> 80
<212> DNA
<213> Artificial Sequence

<220>
<223> gene fragment of heavy chain variable region

<400> 10
atacagggag ttcttggcgt tgtctctgga gatggtgaat cggccctcca cagagtccgc 60

atagtctatg tgaccactat 80

<210> 11
<211> 80
<212> DNA
<213> Artificial Sequence

<220>
<223> gene fragment of heavy chain variable region

<400> 11

acgccaagaa ctccctgtat ctgcaaatga acagtctgag agctgaggat acggccgtat 60

attactgtgc gaaagtctcg 80

<210> 12
<211> 84
<212> DNA
<213> Artificial Sequence

<220>
<223> gene fragment of heavy chain variable region

<400> 12
cactcgagac ggtgaccagg gtaccttggc cccaatagtc aagggaggac gcggtgctaa 60

ggtacgagac tttcgcacag taat 84

<210> 13
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> RT-PCR forward primer specific for heavy chain

<400> 13
cccaagctta ggcctccacc aagggcccat cggtcttcc 39

<210> 14
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> RT-PCR reverse primer specific for heavy chain

<400> 14
gggggatcct tatgggcacg gtgggcatgt gtgagttttg tcacaaga 48

<210> 15
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> RT-PCR forward primer specific for light chain

<400> 15
cccaagcttt cgcgaactgt ggctgcacca tctgtcttca tc 42

<210> 16

<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> RT-PCR reverse primer specific for light chain

<400> 16
cccggatccc taacactctc ccctgttgaa gctctttgtg ac 42

<210> 17
<211> 69
<212> DNA
<213> modified E. coli thermostable enterotoxin II signal sequence

<400> 17
atgaaaaaga caatcgcatt tcttcttgca tctatgttcg ttttttctat tgctacaaat 60

gcccaggcg 69

<210> 18
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer containing StuI restriction enzyme site

<400> 18
tctattgcta caaatgccca ggccttccca accattccct tatcc 45

<210> 19
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer containing StuI restriction enzyme site

<400> 19
agataacgat gtttacgggt ccggaagggt tggtaaggga atagg 45

<210> 20
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer specific for light chain

<400> 20
gggggatcct cacgcggcgc atgtgtgagt tttgtcacaa gatttaggct c 51

<210> 21
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer containing SD sequence and BamHI restriction enzyme site

<400> 21
ggggggatcca ggaggtgatt tatgaaaaag acaatcgcat ttc 43

<210> 22
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer containing BpuI restriction enzyme site

<400> 22
ggggctgagc aggaggtgat ttatgaaaaa gacaatcgca tttc 44

<210> 23
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer containing BpuI restriction enzyme site

<400> 23
ggggctcagc tcacgcggcg catgtgtgag ttttgtcaca agatttaggc tc 52

<210> 24
<211> 63
<212> DNA
<213> E. coli OmpA signal sequence

<400> 24
atgaaaaaga cagctatcgc gattgcagtg gcactggctg gtttcgctac cgttgcgcaa 60

gct 63

<210> 25
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for heavy chain

<400> 25
gaggttcagc tagtcgagtc aggaggcggt 30

<210> 26
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer containing HindIII and StuI restriction enzyme sites

<400> 26
gggagatctt cacgcggcgc atgtgtgagt tttgtcacaa gatttaggct c 51

<210> 27
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer containing stop codon and BamHI restriction enzyme site

<400> 27
gacattcaaa tgacccagag cccatccagc 30

<210> 28
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer containing HindIII and NruI restriction enzyme sites

<400> 28
cccagatctc taacactctc ccctgttgaa gctctttgtg ac 42

<210> 29
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer containing stop codon and BamHI restriction enzyme site

<400> 29
ggggtcgaca ggaggtgatt tatgaaaaag acagctatcg c 41

<210> 30
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> reverse primer containing SalI restriction enzyme site

<400> 30
ggggtcgact cacgcggcgc atgtgtgagt tttgtcacaa gatttaggct c 51

<210> 31
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> forward primer specific for modified E. coli enterotoxin II signal peptide and containing NdeI restriction enzyme site

<400> 31
gggcatatga aaaagacaat cgcatttctt cttgcatcta tg 42

<210> 32
<211> 705
<212> DNA
<213> Artificial Sequence

<220>
<223> TNF-alpha heavy chain

<400> 32
gaggttcagc tagtcgagtc aggaggcggt ttggtacagc ccggcaggtc cctgagactc 60

tcctgtgcgg cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120

ccagggaagg gcctggaatg ggtctcagct atcacttgga atagtggtca catagactat 180

gcggactctg tggagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240

ctgcaaatga acagtctgag agctgaggat acggccgtat attactgtgc gaaagtctcg 300

taccttagca ccgcgtcctc ccttgactat tggggccaag gtaccctggt caccgtctcg 360

agtgcctcca ccaagggccc atcggtcttc cccctggcac cctcctccaa gagcacctct 420

gggggcacag cggccctggg ctgcctggtc aaggactact tccccgaacc ggtgacggtg 480

tcgtggaact caggcgccct gaccagcggc gtgcacacct tcccggctgt cctacagtcc 540

tcaggactct actccctcag cagcgtggtg accgtgccct ccagcagctt gggcacccag 600

acctacatct gcaacgtgaa tcacaagccc agcaacacca aggtggacaa gaaagttgag 660

cccaaatctt gtgacaaaac tcacacatgc ccaccgtgcc catag 705

<210> 33
<211> 645
<212> DNA
<213> Artificial Sequence

<220>
<223> TNF-alpha light chain

<400> 33
gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtagggga cagagtcacc 60

atcacttgtc gggcaagtca gggcatcaga aattacttag cctggtatca gcaaaaacca 120

gggaaagccc ctaagctcct gatctatgct gcatccactt tgcaatcagg ggtcccatct 180

cggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag cctacagcct 240

gaagatgttg caacttatta ctgtcaaagg tataaccgtg caccgtatac ttttggccag 300

gggaccaagg tggaaatcaa acgaactgtg gctgcaccat ctgtcttcat cttcccgcca 360

tctgatgagc agttgaaatc tggaactgcc tctgttgtgt gcctgctgaa taacttctat 420

cccagagagg ccaaagtaca gtggaaggtg gataacgccc tccaatcggg taactcccag 480

gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 540

ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 600

ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gttag 645

<210> 34
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant light chain of TNF-alpha Fab'

<400> 34
Asp Ile Gln Met Thr Gln Ser
1 5

<210> 35
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Recombinant heavy chain of TNF-alpha Fab'

<400> 35
Glu Val Gln Leu Glu Val Asp Ser
1 5